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## MICROSCOPY.

AMOEBOID MOVEMENTS IN EGGS.—Prof. E. Van Beneden, in some very important researches on the development of the eggs of the lower crustacea, states that there is no vitelline membrane in the egg as it lies in the ovary. He proves it, first, by the amoeboid movements already known of other eggs, and which he has observed to be particularly active in these instances; secondly, by the very interesting fact, of his own discovery, that the eggs at this stage, like the Infusoria, swallow, so to speak, globules of carmine. The same fact has been recorded with regard to the white blood corpuscles and other young cells.”—*Schwann, in Scientific Opinion.*

THE MOLECULAR ORIGIN OF INFUSORIA.—The doctrine of Heterogeny, or spontaneous generation, seems to be slowly gaining adherents. Prof. R. Owen has declared in favor of it, and Dr. J. H. Bennett, the eminent pathologist of Edinburgh, advocates it in the “Popular Science Review” for January, under the title given above. He states that animals and plants are developed from ova or seeds, or by parthenogenesis, or by heterogenesis, *i. e.*, from molecules which compose the scum or pellicle seen on the surface of an infusion of any vegetable or animal substance. These molecules “constitute the primordial mucous layer of Burdach, and the prolixous pellicle of Pouchet. These molecules enlarge, and may be seen here and there strongly adhering together in twos and fours, so as to form a little chain.” They continue to unite until they form a short staff, or filament—*bacterium*. These bacteria become longer by uniting with others, and have a serpentine movement whereby they are propelled forward in the fluid, forming a *vibrio*. These bodies disintegrate, and thus a second molecular mass is produced. “In this, rounded masses may be seen to form, which strongly refract light not unlike pus corpuscles, or the colorless corpuscles of the blood. These soon begin to move with a jerking motion, dependent upon a vibratile cilium attached to one of their extremities—*Monas lens*. In a day or two other cilia are produced, the corpuscle enlarges, is nucleated, and swims through the fluid evenly. Varied forms may now occur in the molecular mass, dependent on the temperature, season of the year, exposure to sunlight, and nature of the infusion, all having independent movements. They have been denominated *Amœbæ*, *Paramecia*, *Vorticellaæ*, *Kolpoda*, *Keronæ*, *Glaucoma*, *Trachelius*,” etc., etc. “At other times it happens that the molecular mass, instead of being transformed into animalcules, gives origin to minute fungi,” such as *Torula*, *Penicillium*, etc. “In all these cases no kind of animalcule, or fungus, is ever seen to originate from preexisting cells or larger bodies, but always from molecules.”

“That the infusoria originate and are developed in the molecular pellicle which floats on the surface of putrefying or fermenting liquids, has been admitted by all who have carefully watched that pellicle with the

microscope, more especially by Kutzing, Pineau, Nicolet, Pouchet, Jolly and Musset, Schaffhausen and Mantegazza." He holds that the germs of these organisms do not exist in the air, nor multiply by self division, nor are they capable of elongating or aggregating, thus forming filaments or larger masses, unless by the union of other molecules like themselves. Having shown, from the observations of Pasteur and others, that the germs cannot preëxist in the air, he holds that they cannot preëxist in the water, as the numerous experiments by Pouchet, Meunier, etc., have shown that all animal and vegetable germs are killed by boiling them; yet nothing is more certain than that long ebullition of various infusions has wholly failed to prevent the formation in them of animal and vegetable growths," the molecules appearing in them after the water cools. He ascribes their origin to phenomena of a chemical nature, the results of the discussions in the French Academy of Sciences for the last eight years, showing "that not the slightest proof is given by the chemists, with M. Pasteur at their head, that fermentation and putrefaction are necessarily dependent on living germs existing in the atmosphere. They rather tend to show that these are phenomena of a chemical nature, as was ably maintained by Liebig. In conclusion, the author holds that the infusoria, animal and vegetable, "originate in oleo-albuminous molecules, which are formed in organic fluids, and which, floating to the surface, form the pellicle or prolixerous matter. There, under the influence of varied conditions, such as temperature, light, chemical exchanges, density, pressure, and composition of atmospheric air, and of the fluid, etc., the molecules by their coalescence, produce the lower forms of vegetable and animal life."

CHICAGO MICROSCOPIC CLUB.—We have received the Constitution and By-laws of this new society, and the Proceedings of the meeting held January 26th, when Prof. Freer exhibited human blood cells showing the cell as a bi-concave disc, with a nucleus appearing as a prominence in the centre; most microscopists having denied the existence of a nucleus in the human blood disc.

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#### ANSWERS TO CORRESPONDENTS.

A. J. O., Morristown.—We would be much obliged for specimens of sheep ticks and their eggs and young, with notes on their habits.

J. S., Lancaster, Pa.—Your notes and sketches of bird parasites were of great interest to us. We would be greatly indebted to ornithologists for specimens of bird ticks, lice, mites and other external parasites, with their eggs and young, as well as parasitic worms, such as the tape-worms and the "round worms." They may be collected in vials of whiskey or weak alcohol, and sent by mail in a strong pasteboard box, or roll of tin. Has any one ever found the bed-bug in swallow's nests; they occur thus in Europe.

S. W. C., Otisco, N. Y.—After making your insect case as nearly air-tight as possible, place camphor in a paper with pin holes, or smear the box with creosote, or keep benzine in constant evaporation in the box. Beetles may be soaked in a solution of corrosive sublimate previous to arranging them in the insect-case. Above all, watch carefully for dust made by devouring insects, which falls to the bottom of the case containing them, by which we may detect their presence in the case.

THE DATE PALM.—In answer to a correspondent who enquires whether dates ever grow so low that a man can pick and eat them as he walks under the tree, we answer